

## EVIDENCE COLLECTION DEVICE AND METHOD

This invention relates to a device for use in the collection of evidence, and also to a method of collecting evidence, making use of the evidence collection device.

It is common after an attack, for example rape, has occurred for evidence to be collection from the victim of the attack. The evidence, typically in the form of biological materials which contain the DNA of the attacker, or fibres from the attackers clothing, is collected using a number of techniques, for example by removing materials from beneath a victims finger nails and by taking swabs from the victim. Although such techniques result in the successful collection of evidence, there is always the risk that some evidence which could be used to identify the attacker is missed, and as a result of the failure to collect such evidence, there is a risk that the attacker may not be caught or insufficient evidence to conclusively identify the attacker is collected.

It is an object of the invention to provide an evidence collection device and a method of collecting evidence which can be used to reduce the risk of evidence failing to be collected.

According to a first aspect of the invention there is provided an evidence collection device comprising a housing having a closable lid, at least part of the housing being defined by a strainer member adapted to allow water entering the housing to escape therefrom through the strainer member, but to collect, and retain within the housing, particulate matter carried by the water.

The strainer member includes a plurality of openings, the openings preferably being sufficiently small to ensure that human cells are retained within the housing. The openings of the strainer member may be of a uniform size.

- 5 Alternatively, the openings may be of non-uniform size, for example the openings in a central part of the strainer member being of smaller dimensions than those located towards the edges of the strainer member. Such an arrangement may be advantageous in that the larger openings allow water to escape from the housing at a relatively fast rate. A vortex formed as a result of the water passing through the housing tends to separate relatively large
- 10 particulate matter from smaller matter, the smaller matter tending to collect in the central part of the housing, where the openings in the strainer member are smaller, larger matter tending to collect at radially outer parts of the housing where the openings are larger, thus the provision of the larger openings need not significantly increase the risk of matter escaping from the housing.

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The housing is conveniently of dimensions to allow it to be received within and close the outlet of a bath, shower or wash basin. The housing may be secured to or form an integral part of a liner, for example for a bath, shower or wash basin.

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- Another possible use for the device is on a mortuary table to collect evidence when a post mortem is being conducted. Again, the device could be included in a liner. If desired, the liner could take the form of a closable bag in which a body can be transported from, for example, the scene of a crime to the
- 25 mortuary.

The lid of the housing is conveniently securable in position on the remainder of the housing by screw threads. It will be appreciated, however, that other techniques could be used to secure the lid in position, for example the lid may

be snap-fitted to the remainder of the housing, and may be held captive to the housing, if desired, by a flexible strap.

- According to another aspect of the invention there is provided a method of
- 5 collecting evidence comprising locating an evidence collection device of the type defined hereinbefore within the outlet of a bath, shower or wash basin, allowing the individual from whom evidence is to be collected to bath, shower or wash, allowing water to escape from the bath, shower or basin, the water entering the housing and passing through the strainer member,
- 10 particulate matter carried into the housing being unable to pass through the strainer member and being retained within the housing, and closing the lid to trap the collected matter within the housing.

It will be appreciated that, where used in a shower, a step of opening the lid

15 may be performed prior to commencement of showering, whereas when used in a bath or basin, the lid may be kept in a closed condition until after completion of the bath/wash, and then removed to allow the water to drain from the bath/basin.

- 20 A subsequent operation of wiping the bath, shower or basin using a cloth or wipe having a known DNA content may be performed to collect any matter adhering thereto.

The invention will further be described, by way of example, with reference to

25 the accompanying drawing (Figure 1) which is a diagrammatic cross sectional view of an evidence collection device in accordance with an embodiment of the invention.

The attached drawing illustrates an evidence collection device which comprises a generally cylindrical housing 10 of short axial extent, the housing 10 being of diameter chosen to allow the housing 10 to be received with the outlet of a bath. The housing 10 is of open, tubular form, and is 5 conveniently manufactured from a rubber or synthetic rubber-like material dimensioned such that, when received within the outlet of a bath, the housing 10 forms a substantially fluid tight seal within the outlet.

10 The lower end 12 of the housing 10 is closed by a strainer member 14. The strainer member 14, in a simple embodiment of the invention, takes the form of a mesh material having openings 16 therein of dimensions sufficiently small that, although water can pass through the openings 16 of the mesh material, particulate matter carried by the water, for example human cells, hairs, fibres from clothing etc, cannot pass through the openings 16.

15 The upper part 18 of the housing 10 is provided with internal screw thread formations cooperable with external screw thread formations provided on a lid member 24. The lid member 24 is of generally circular shape, arranged to be received within the upper part 18 of the housing 10. When secured in 20 position, the housing 10, lid member 24 and strainer member 14 together define a closed volume 26. As shown, to assist in securing the lid member 24 in position, a handle 28 is formed thereon.

25 In use, after collecting evidence from an individual in the usual manner, the individual baths, the collecting device being placed in the outlet of the bath instead of using a conventional bath plug, the lid member 24 of the collection device closing the upper part 18 of the housing 10. After bathing, the lid member 24 is removed, allowing bath water to enter the housing 10. The water entering the housing 10 is able to pass through the openings 16 of the

strainer member 14, the water then flowing through the outlet of the bath in the usual manner. Particulate matter carried by the water entering the housing 10 is unable to pass through the openings 16 and is trapped within the housing 10.

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After the bath has emptied, the lid member 24 is secured in position on the housing 10, trapping the collected matter within the volume 26, and the collection device is removed from the outlet of the bath and sent to a suitable laboratory for examination.

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Relatively low density matter tends to float upon the surface of the bath water, and may adhere to the bath rather than enter the collection device. Such matter may be collected by wiping the bath using a cloth or wipe having a known DNA content and supplying the cloth or wipe to the laboratory with 15 the collection device.

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Although the description hereinbefore is of the use of the device with a bath, the device may also be used with a wash basin or shower, different size devices being used in different applications. Where used with a shower, the 20 lid component may be removed prior to showering to avoid forming a build up of water within the shower tray.

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The device may be modified in a number of ways. For example, the lid member may be snap fitted rather than screw fitted to the remainder of the 25 housing, and it may be held captive to the housing, if desired, thus reducing the risk of loss or contamination. Further, where evidence of a particular type is sought, then the dimensions of the openings 16 of the strainer member 14 may be tailored to trap particles of the desired matter but to allow smaller matter to pass through the openings 16.

As water passing through an opening tends to form a vortex, and the vortex tends to separate the matter carried with the water so that relatively large particulate matter moves radially outward whereas smaller matter tends to

5 occupy a more central position, the openings 16 of the strainer member 14 need not be of a uniform size, but rather may be relatively large adjacent the periphery of the strainer member 14 where the larger matter tends to collect and smaller at a central part of the strainer member 14 where the smaller matter tends to collect without significantly impairing the ability of the device

10 to collect evidence. Such an arrangement may be advantageous in that the speed with which water can pass through the housing is increased.

Further, if desired, one or more ribs may be provided over the surface of the strainer member 14 to assist in the collection of evidence, and/or a collection

15 chamber may be provided radially outwardly of the strainer member 14 for use in the retention of relatively large matter.

Clearly, in order to ensure that the evidence is not contaminated, it is important to ensure that the volume 26 of the device is of known DNA content prior to use. The device will thus be supplied with the lid in its closed condition, removal of the lid to allow water to enter the housing only occurring after installation of the device in the outlet of a bath, shower, wash basin or the like. As the strainer member does not allow matter to pass therethrough, after use, the risk of contamination of the collected evidence is

20 small. As the device is of known DNA content, the laboratory examination of the device, after use to collect evidence, can include a step of examining the collected evidence for DNA, ignoring the DNA known to be present in the device before use to collect the evidence.

Although the device is primarily intended for use by the victims of crime, conveniently in their own homes, the device may also be used by suspected perpetrators. In such circumstances, it may be desirable to locate the device in such a position as to ensure that the suspected attacker cannot remove,

5 tamper with or impair the evidence collecting ability of the device. The device may also be suitable for use in other applications.

In a modification to the arrangement described hereinbefore the device forms part of, for example an integral part of, a liner for use in a bath, shower or

10 wash basin. In use, the liner is positioned in the bath, shower or wash basin, and the user washes. After use, the step described hereinbefore of wiping the bath, shower or wash basin to collect evidence can be omitted as any such evidence will be collected within the liner. The liner may be closable to prevent contamination of the evidence. Alternatively, the liner can be

15 positioned within a suitable container, after use, to prevent contamination. As discussed hereinbefore, suitable steps should be taken prior to use to prevent contamination of the device.

Another use for the device is in collecting evidence at a post mortem, the

20 device being used in association with, for example, the outlet or drain of a mortuary table. Again, the device could form part of a liner. The liner could form a bag into which a body can be placed for transportation from, for example, the scene of a crime to the mortuary. It will be appreciated that the uses described hereinbefore are not exhaustive, and that the device may be

25 used in other applications in which evidence is to be collected.